

# AIR FORCE PROGRAMS

## National Airspace System (NAS)

The National Airspace System (NAS) program will replace three types of Air Traffic Control and Landing System equipment used to support the radar approach control mission. NAS includes voice switches, approach control and control tower automation, and airport surveillance radars.

When fully fielded, the DoD NAS program upgrade will include four programs:

- The Voice Communications Switching System (VCSS) is the communications component of the NAS modernization program.
- The DoD Advanced Automation System (DAAS) is designed to receive and process primary and secondary radar data, flight plan information, weather, airport environmental data, and administrative information (such as notices to Airmen).
- The Digital Airport Surveillance Radar (DASR) is designed to provide accurate target data to the local air traffic control facilities with improved target detection accuracy, clutter rejection, aircraft identification accuracy, altitude data, and weather capability.
- The Military Airspace Management System (MAMS) schedules, tracks, and documents utilization of special use airspace in a non-real-time manner, and interoperates with the Federal Aviation Administration (FAA). The Air Force moved MAMS from development to sustainment on October 1, 2000. Since then, three software versions have been released – one major release, and two minor releases.

The FAA is the lead organization for VCSS and DAAS acquisition. The Air Force Operational Test and Evaluation Center (AFOTEC) serves as the DoD lead for DAAS/DASR testing and sole test agency for MAMS. DoD is working with the FAA through an interagency agreement for all VCSS, DAAS, and DASR test activities. DOT&E will publish one beyond low-rate initial production report on NAS after all system-level testing is complete.

AFOTEC found the VCSS operationally effective, but not operationally suitable as a result of the VCSS DoD multi-Service operational test and evaluation (MOT&E) in 1999. DOT&E reviewed corrective actions taken after the MOT&E and found them adequate to rectify the suitability shortcomings. The full-rate production decision was executed in November 1999.

The MOT&E concept for DAAS and DASR included two phases of testing, Phase 1 (developmental test/operational test) and Phase 2 (dedicated operational testing). DAAS and DASR have been through two rounds of MOT&E, conducted from October 1999 through September 2002. In each round of operational testing, AFOTEC identified significant numbers of critical deficiencies, and while they eventually rated the DAAS operationally effective and operationally suitable in June 2001, the DASR was last rated by AFOTEC as not effective and not suitable in a February 2003 MOT&E 2 status report.

Based upon Milestone Decision Authority direction in November 2002, the Air Force Acquisition Executive, the NAS Program Office, and AFOTEC developed a new way ahead for NAS, leveraging the results of FAA testing to the extent possible, and planning for another round of MOT&E with DoD production representative test articles in the DoD environment.



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## **TEST & EVALUATION ACTIVITY**

During January and February 2003, AFOTEC and DOT&E conducted in-depth analyses of candidate dedicated operational test sites for MOT&E 3.

In April 2003, the principals from DOT&E, Air Force Test and Evaluation, AFOTEC, and the NAS Program Office collectively determined that the NAS way ahead included dedicated operational testing in MOT&E 3, to be conducted at Moody Air Force Base, Georgia.

The NAS General Officer Steering Group met in May 2003 and directed that the NAS program schedule be compressed to allow for a NAS Milestone III decision in 3QFY04. The NAS Program Office has recommended that dedicated operational testing in MOT&E 3 commence in March 2004 to allow for the NAS Milestone III decision to be made in September 2004.

Also in May, representatives from the user and acquisition communities met with DOT&E and the test community to receive clarification on the test concept to achieve understanding of the conduct of the test and the evaluation of collected data.

The Program Office and AFOTEC began work on an update to the May 2000 Test and Evaluation Master Plan for MOT&E 3.

## **TEST & EVALUATION ASSESSMENT**

DOT&E is concerned over the immaturity of configurations that have been repeatedly presented for operational testing. After each test period, critical deficiencies were identified and the Program Office implemented plans to fix, regression test, and re-test operationally. AFOTEC discovered similar or additional deficiencies during each test event.

AFOTEC's test concept for MOT&E 3 remains the same two-phased approach as for the original MOT&E and MOT&E 2. In MOT&E 3, Phase 1 developmental test/operational test metrics associated with effectiveness parameters in the DoD NAS Operational Requirements Document will be examined using the results of testing conducted by the FAA Technical Center, making maximum use of the FAA's testing. The FAA's testing to support the DoD's Phase 1 developmental test/operational test has been completed, and the FAA published its results November 6, 2003. In MOT&E 3, currently scheduled for March 2004, Phase 2 dedicated operational testing will provide data to support final resolution of all DoD NAS Operational Requirements Document parameters and will examine mission accomplishment.